

Patent claims

1. Modified recombinant allergens (mra) which are derived from allergens which can be obtained from natural raw materials by extraction, and/or their physiologically harmless salts or solvates.
2. Modified recombinant allergens according to Claim 1, characterized in that these allergens are derived from the main allergens of groups 1 - 6.
3. Modified recombinant allergens according to <sup>claim 1</sup> ~~Claims 1~~ and 2, characterized in that the reactivity with IgE antibodies from patients who are allergic to grass pollen is eliminated or reduced, with the reactivity with T lymphocytes still being retained.
4. Modified recombinant allergens according to <sup>claim 1</sup> ~~one or more of the preceding claims~~, characterized in that the genes of the allergens are modified by means of genetic manipulation methods such that the polypeptides which they encode exhibit substitutions, deletions and/or additions of individual or several amino acids as compared with the wild type.
5. Modified recombinant allergens according to <sup>claim 1</sup> ~~claims 1-4~~, characterized in that dominant T cell-reactive regions (T cell epitopes) of the allergens are not altered by genetic manipulation.
6. Modified recombinant allergens according to Claim 2, characterized in that these allergens are derived from main allergens of group 5.
7. Modified recombinant allergens according to Claim 6, characterized in that these allergens derive from the main Phl p 5b allergen.

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8. Modified recombinant allergens according to Claim 5, characterized in that at least one, or a combination, of the regions 16-42, 135-149 and 180-206 of the Phl p 5b polypeptide, consisting of a total of 265 amino acids, is/are not altered.
9. Modified recombinant allergens according to Claim 8, selected from the following group of polypeptides
- 10 PM1 ( $N^{32} \rightarrow D$ ,  $D^{49} \rightarrow L$ ,  $K^{50} \rightarrow A$ )
- PM2 ( $D^{49} \rightarrow L$ ,  $K^{50} \rightarrow A$ )
- PM3 ( $A^{13} \rightarrow C$ )
- DM1 ( $\Delta K^{50} \rightarrow P^{\Delta 32}$ ,  $D^{49} \rightarrow L$ )
- DM 2 ( $\Delta F^{51} - G^{178}$ ,  $D^{49} - L$ ,  $K^{50} - A$ )
- DM2\* ( $\Delta F^{51} - G^{178}$ , 179 - 217 altered sequence)
- 15 DM3 ( $\Delta A^{154} - T^{177}$ ,  $A^{220} \rightarrow T$ )
10. Process for preparing modified recombinant allergens according to ~~Claims 1 to 9~~ and/or their physiologically harmless salts or solvates,
- 20 characterized in that different variants of the polymerase chain reaction (PCR) are used.
11. Pharmaceutical preparation comprising one or more modified recombinant allergens according to
- 25 ~~Claims 1-9~~ and/or one of their physiologically harmless salts or solvates and also, where appropriate, additional active compounds and/or auxiliary substances, for treating IgE-mediated allergies.
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12. Process for producing pharmaceutical preparations, characterized in that at least one modified recombinant allergen according to ~~Claims 1-9~~ and/or one of their physiologically harmless salts or solvates
- 35 are brought into a suitable dosage form together with at least one solid, liquid or semiliquid carrier substance or auxiliary substance.
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13. Use of the modified recombinant allergens and/or one of their physiologically harmless salts or solvates according to ~~claims 1-9~~ <sup>claim 1</sup> for preparing a pharmaceutical for the immunospecific therapy (hyposensitization) of allergies.

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14. Use of the modified recombinant allergens according to ~~claims 1-9~~ <sup>claim 1</sup> for the immunospecific therapy (hyposensitization) of allergies.

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